

NEWMAN, PAUL A.

Dr. Paul A. Newman

**Atmospheric Physicist
Atmospheric Chemistry and Dynamics Branch
NASA Goddard Space Flight Center**

RESEARCH AREA EXPERIENCE: Atmospheric Dynamics, Stratospheric Climatology, Stratospheric Ozone

EDUCATION:

1984 - Ph.D. -	Physics, Iowa State University, Ames, IA
1978 - B.S. -	Physics, minor in Mathematics, Seattle University, Seattle, WA Magna Cum Laude

PREVIOUS POSITIONS:

1989 - 1990	Universities Space Research Associates, GSFC
1986 - 1989	Applied Research Corp., Landover, MD
1984 – 1986	NASA Goddard Space Flight Center, Greenbelt, MD, National Research Council Postdoctoral Fellow
1982 - 1984	Iowa State University, Ames, IA, L. H. Brown Pre-Doctoral Fellow
1978 - 1981	Iowa State University, Ames, IA, Research and Teaching Assistant in Physics

**PROFESSIONAL SOCIETY
MEMBERSHIPS:**

American Meteorological Society (1979-present)
AMS Polar Meteorology and Oceanography Committee (1994)
AMS Middle Atmosphere Committee (1994)
American Geophysical Union (1979-present)
AASE theory team member (1988-1989)
AASE II theory team member (1991-1992)
SPADE theory team member (1992-1993)
ASHOE/MAESA theory team member (1994)
ERAST leadership team member (1994-1997)
Associate Editor, Journal of Geophysical Research (1997-2004)
Stratospheric Tracers of Atmospheric Transport (STRAT) Co-Project Scientist (1994-1997)
POLARIS Co-Project Scientist (1997)

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SOLVE Co-Project Scientist (1999-2000)
International Council of Scientific Unions
(ICSU), Solar-Terrestrial Energy Program
(STEP), STEP Results, Applications, and
Modeling Phase (SRAMP) Steering Committee
Member
SOLVE-II Co-Project Scientist (2001-2002)
CRYSTAL-FACE ER-2 Platform Scientist (2002)
Pre-AVE Co-Project Scientist (2004)
AVE Project Scientist (2004-2006)
Network for Detection of Stratospheric Change
steering group member, 1994-2004
Tropical Composition, Cloud and Climate
Coupling (TC4) ER-2 platform scientist (2007)

AWARDS:

Magna Cum Laude, Seattle University
L. H. Brown Pre-Doctoral Fellow
Premium for Academic Excellence, 1984
National Research Council Postdoctoral Fellow
NASA Group Achievement Award (AASE I)
NASA Group Achievement Award (Ozone
Trends Panel)
NASA Group Achievement Award (Temperature
Analysis Group)
AGU, Excellence in Reviewing award, 1993 JGR
GSFC Laboratory for Atmospheres Peer Award,
1992
NASA Group Achievement Award (AASE II),
1992
AGU, Excellence in Reviewing Award, 1994 JGR
NASA Group Achievement Award (Stratospheric
Forecasting), 1994
NASA Group Achievement Award (SPADE), 1994
Naval Research Laboratory's Alan Berman
Research Publication Award, 1995
NASA Group Achievement Award
(ASHOE/MAESA), 1995
NASA Group Achievement Award (POLARIS),
1998
NASA GSFC Special Act Award (SOLVE), 2000
GSFC Laboratory for Atmospheres Peer Award,
2001
Arthur S. Flemming Award, 2002
NASA Group Achievement Award (SOLVE II),
2004

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NASA Group Achievement Award (SOLVE II

DC-8 Science Team), 2005

GSFC Laboratory for Atmospheres Peer Award,

2006

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REFEREED PUBLICATIONS:

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2. "Short Meridional Scale Anomalies in the Lower Stratosphere and Upper Troposphere," P. A. Newman and J. L. Stanford, *J. Atmos. Sci.*, **42**, 2081-2092, 1985.
3. "Horizontal Mixing Coefficients Calculated from NMC Data," P. A. Newman, M. R. Schoeberl, and R. A. Plumb, *J. Geophys. Res.*, **91**, 7919-7924, 1986.
4. "Nimbus 7 Satellite Measurements of the Springtime Antarctic Ozone Decrease," R. S. Stolarski, A. J. Krueger, M. R. Schoeberl, R. D. McPeters, P. A. Newman, and J. C. Alpert, *Nature*, **322**, 808-811, 1986.
5. "October Antarctic Temperature and Total Ozone Trends from 1979-1985," P. A. Newman and M. R. Schoeberl, *Geophys. Res. Lett.*, **13**, 1206-1209, 1986.
6. "The Morphology of Antarctic Total Ozone as Seen by TOMS," M. R. Schoeberl, A. J. Krueger, and P. A. Newman, *Geophys. Res. Lett.*, **13**, 1217-1220, 1986.
7. "The Final Warming and Polar Vortex Disappearance During the Southern Hemisphere Spring," P. A. Newman, *Geophys. Res. Lett.*, **13**, 1228-1231, 1986.
8. "Mixing Rates Calculated from Potential Vorticity," P. A. Newman, M. R. Schoeberl, R. A. Plumb, and J. E. Rosenfield, *J. Geophys. Res.*, **93**, 5221-5240, 1988.
9. "Effect of Computed Horizontal Diffusion Coefficients on Two-Dimensional N₂O Model Distributions," C. H. Jackman, P. A. Newman, P. D. Guthrie, and M. R. Schoeberl, *J. Geophys. Res.*, **93**, 5213-5219, 1988.
10. "Coherent Ozone-Dynamical Changes during the Southern Hemisphere Spring, 1979-1986," P. A. Newman, and W. J. Randel, *J. Geophys. Res.*, **93**, 12,585-12,606, 1988.
11. "Antarctic Springtime Ozone Depletion Computed from Temperature Observations," J. E. Rosenfield, M. R. Schoeberl, and P. A. Newman, *J. Geophys. Res.*, **93**, 3833-3849, 1988.

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14. "Reconstruction of the Constituent Distribution and Trends in the Antarctic Polar Vortex from ER-2 Flight Observation," M. R. Schoeberl, L. R. Lait, M. Proffitt, P. A. Newman, R. L. Martin, D. L. Hartmann, M. Loewenstein, J. Podolske, S. E. Strahan, J. Anderson, K. R. Chan, and B. Gary, *J. Geophys. Res.*, **94**, 16815-16846, 1989.
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16. "Evidence of the Mid-Latitude Impact of Antarctic Ozone Depletion," R. J. Atkinson, W. A. Mathews, P. A. Newman, and R. A. Plumb, *Nature*, **340**, 290-293, 1989.
17. "Total Ozone during the 1988-1989 Northern Hemisphere Winter," P. A. Newman, R. S. Stolarski, M. R. Schoeberl, L. R. Lait, and A. J. Krueger, *Geophys. Res. Lett.*, **17**, 317-320, 1990.
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19. "A Comparison of Arctic Lower Stratospheric Winter Temperatures for 1988-89 with Temperatures Since 1964," R. M. Nagatani, A. J. Miller, M. E. Gelman, and P. A. Newman, *Geophys. Res. Lett.*, **17**, 333-336, 1990.
20. "Stratospheric Temperatures During AASE: Results From STRATAN," R. B. Rood, P. A. Newman, D. J. Lamich, L. R. Lait, and R. Chan, *Geophys. Res. Lett.*, **17**, 337-340, 1990.
21. "Radiative Heating Rates during the Airborne Arctic Stratospheric Expedition," J. E. Rosenfield, M. R. Schoeberl, L. R. Lait, P. A. Newman, M. H. Proffitt, and K. K. Kelly, *Geophys. Res. Lett.*, **17**, 345-348, 1990.

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43. "Chemical Loss of Ozone in the Arctic Polar Vortex in the Winter of 1991-1992," R. J. Salawitch, C. F. Wofsy, E. W. Gottlieb, D. W. Toohey, L. M. Avallone, L. R. Lait, P. A. Newman, M. R. Schoeberl, M. Loewenstein, J. R. Podolske, S. E. Strahan, A. Weaver, M. H. Proffitt, C. R. Webster, R. D. May, D. W. Fahey, D. Baumgarder, J. E. Dye, J. C. Wilson, K. K. Kelly, J. W. Elkins, K. R. Chan, and J. G. Anderson, *Science*, **261**, 1146-1149, 1993.
44. "Heterogeneous Reaction Probabilities, Solubilities, and Physical State of Cold Volcanic Aerosols," O. Toon, B. Gary, L. Lait, P. Newman, R. Pueschel, P. Russell, M. Schoeberl, G. Toon, W. Traub, F. Valero, H. Selkirk, and J. Jordan, *Science*, **261**, 1136-1140, 1993.
45. "The Seasonal Evolution of Reactive Chlorine in the Northern Hemisphere Stratosphere," D. W. Toohey, L. M. Avallone, L. R. Lait, P. A. Newman, M. R. Schoeberl, D. W. Fahey, C. R. Webster, R. D. May, and J. G. Anderson, *Science*, **261**, 1134-1136, 1993.
46. "Chlorine Chemistry on Polar Stratospheric Cloud Particles in the Arctic Winter," C. R. Webster, R. D. May, D. W. Toohey, L. M. Avallone, J. G. Anderson, P. Newman, L. Lait, M. R. Schoeberl, J. W. Elkins, and K. R. Chan, *Science*, **261**, 1130-1134, 1993.
47. "The Evolution of ClO and NO along Air Parcel Trajectories," M. R. Schoeberl, A. R. Douglass, R. S. Stolarski, P. A. Newman, L. R. Lait, D. Toohey, L. Avallone, J. G. Anderson, W. Brune, D. W. Fahey, and K. Kelly, *Geophys. Res. Lett.*, **20**, 2511-2514, 1993.
48. "Volcanic and Wave-Cloud Optical Depth Spectra from DC-8 Tracking Sunphotometer Measurements: 1. Results vs. Latitude, Time, and Vortex Structure," P. B. Russell, J. M. Livingston, R. F. Pueschel, J. A. Reagan, E. V. Browell, G. C. Toon, P. Newman, L. R. Lait, M. R. Schoeberl, and B. M. Herman, *Geophys. Res. Lett.*, **22**, 2571-2574, 1993.
49. "AASE II Stratospheric Meteorological Conditions," P. Newman, L. Lait, M. Schoeberl, E. Nash, K. Kelly, D. W. Fahey, R. Nagatani, D. Toohey, J. Anderson, and L. Avallone, *Science*, **261**, 1143-1146, 1993.

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REFEREED PUBLICATIONS: (Continued)

50. "Record Low Global Ozone in 1992," J. Gleason, P. K. Bhartia, J. R. Herman, R. McPeters, P. Newman, R. S. Stolarski, L. Flynn, G. Labow, D. Larko, C. Seftor, C. Wellemeyer, W. D. Komhyr, A. J. Miller, and W. Planet, *Science*, **260**, 523-526, 1993.
51. "Interpretation of NO_x/NO_y Observations from AASE-II Using a Model of Chemistry Along Trajectories," S. R. Kawa, D. W. Fahey, J. C. Wilson, M. R. Schoeberl, A. R. Douglass, R. S. Stolarski, E. L. Woodbridge, H. Jonsson, L. R. Lait, P. A. Newman, M. H. Proffitt, D. W. Toohey, D. E. Anderson, M. Loewenstein, K. R. Chan, C. R. Webster, R. May, and K. K. Kelly, *Geophys. Res. Lett.*, **20**, 2507-2510, 1993.
52. "MLS ClO Observations and Arctic Polar Vortex Temperatures," M. R. Schoeberl, R. S. Stolarski, A. R. Douglass, P. A. Newman, L. R. Lait, J. W. Waters, L. Froidevaux, W. G. Ready, *Geophys. Res. Lett.*, **20**, 2861-2864, 1993.
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57. "Antarctic Total Ozone in 1958," P. A. Newman, *Science*, **264**, 543-546, 1994.
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61. "An Algorithm for Forecasting Mountain Wave-Related Turbulence in the Stratosphere," J. T. Bacmeister, P. A. Newman, B. L. Gary, and K. R. Chan, *Weather and Forecasting*, **9**, 241-253, 1994.
62. "A Comparison of Winds From the STRATAN Data Assimilation System to Balanced Wind Estimates", L. Coy, R. Rood, P. Newman, *J. Atmos. Sci.*, **51**, 2309-2315, 1994.
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64. "Meteor-3 Total Ozone Mapping Spectrometer Observations of the 1993 Ozone Hole", J. Herman, P. Newman, R. McPeters, A. Krueger, P. Bhartia, C. Seftor, O. Torres, G. Jaross, R. Cebula, D. Larko, C. Wellemeyer, *J. Geophys. Res.*, **100**, 2973-2983, 1995.
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